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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,679	06/01/2001	Yuji Isoda	Q64821	7676

7590

04/22/2003

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EXAMINER

GABOR, OTILIA

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,679

Applicant(s)

ISODA, YUJI

Examiner

Otilia Gabor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☒ Claim(s) 15-19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Amendment

1. The amendments filed 03/13/2003 have been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (U. S. Patent 6031236) and further in view of Tsuchino et al. (U. S. Patent 5055681).

Arakawa et al. discloses an apparatus 10 and method to prepare a stimuable phosphor sheet comprising a support positioned in the deposition system 11 and an evaporation source 11a by which the phosphor layer is evaporated in the vacuum chamber 12 of the deposition apparatus 10. The powdery (solid) stimuable phosphor is introduced into the evaporation source 11a while the substrate or support on which the phosphor is to be deposited is positioned in the deposition system 11. Then the exhaust system 13 is driven to set the vapor pressure within the vacuum container 12 to a desired level to perform the deposition of the stimuable phosphor onto the substrate. The deposition is carried out by heating the substrate to a predetermined temperature. The support could be Quartz, alumina, silicon carbide or zirconia. Optionally a transparent glass protective film (layer) is also deposited on the substrate to form an

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airtight seal over the substrate frame. The phosphor to be vaporized can be selected from the group including a stimuable alkali metal halide phosphor with the formula as claimed (see Cols.5-7). The phosphor sheet thus prepared using the vacuum evaporation method has a relative density more than 70% and preferably up to 93%. Also the support is connected to a heating device whereby the temperature of the support can be changed.

Arakawa et al. fails to specifically use an electron beam heating method for the process of evaporation, however as disclosed by Tsuchino et al. the electron beam vacuum evaporation of a phosphor onto the support which, can be heated or cooled before, during or after the vaporization, is a well known and used evaporation method and thus using this heating method constitutes only a matter of design choice. The phosphor to be evaporated can employ different forms and raw phosphor materials.

Allowable Subject Matter

4. Claims 1-14 are allowed.
5. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: The arguments presented by the Applicant regarding the phosphor source (or layer) that is being vaporized as the phosphor solid that has the relative density as claimed (80-98%) and not the final phosphor sheet, as well as the arguments regarding

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the accelerating electron beam voltage source and the cooling process, render the claims allowable over the prior art cited.

Response to Arguments

7. The arguments filed 03/13/2003 regarding claim 15 have been considered but are not persuasive for the following reasons: the Applicant argues that the protective glass layer disclosed in the reference Arakawa et al. does not provide an airtight seal, however given that the protective layer is formed by either coating the surface of the phosphor layer with the transparent protective film or fixing the sealing layer onto the phosphor layer with an adhesive and given that it is used to protect the phosphor layer physically and chemically, there is no space between the protective and the phosphor layer and thus it forms an airtight seal. Also, according to the claimed invention as disclosed in claim 17, the glass is deposited on the phosphor layer, thus the same sealing method is used both in the present invention and the reference to obtain the seal between the two layers. As such the claims are still rejected as shown in detail above.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 703-305-0384. The examiner can normally be reached on Monday-Friday between 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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April 15, 2003


DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800